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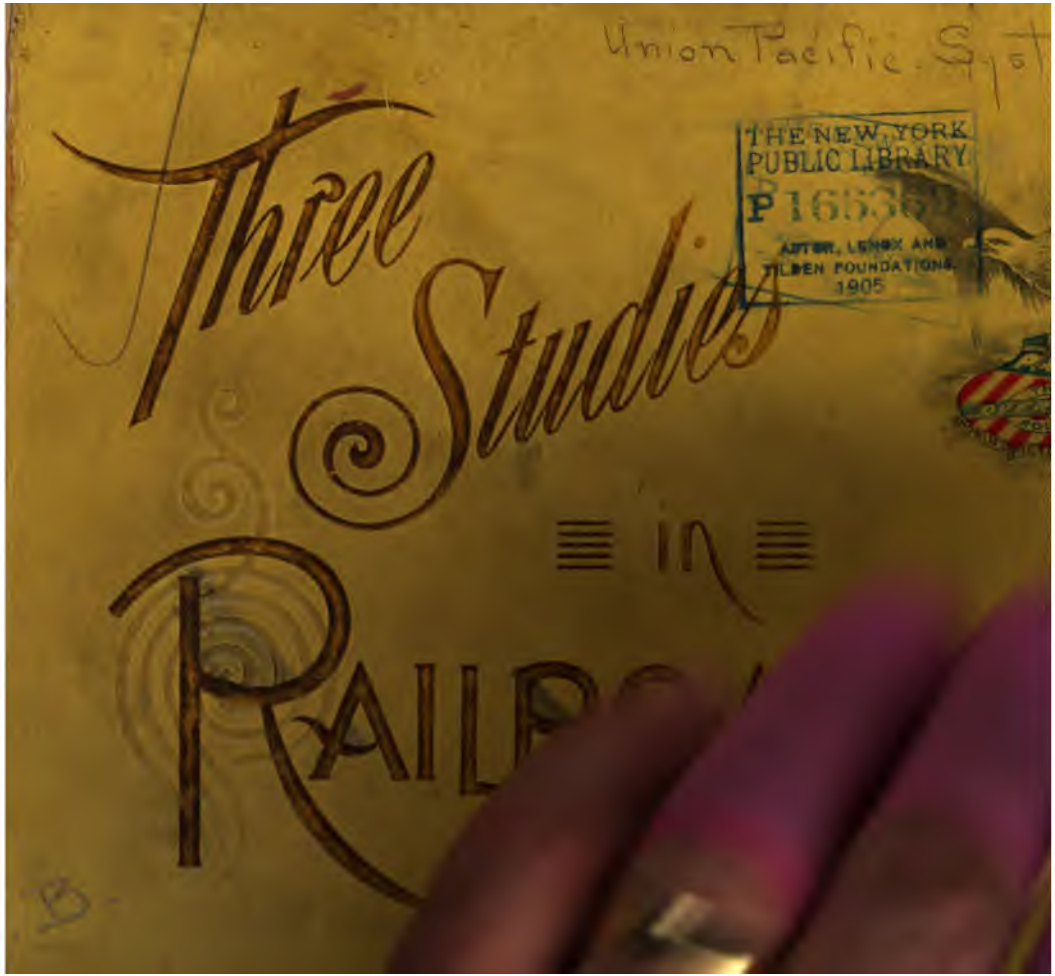
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Three Studies in Railroading.....

"Building the Road"

By General G. M. Dodge

"Driving the Last Spike"

By the late Sidney Dillo

"The West and the Railroads"

By the late Sidney Dillo

Building the Union Pacific

A PAPER READ BY GEN. G. M. DODGE BEFORE THE SOCIETY OF THE AR
NESSEE, AT ITS TWENTY-FIRST ANNUAL REUNION, TOLEDO,
SEPTEMBER 15, 1888.

Mr. President and Companions of the Army of the Tennessee:

"Habit," says Carlyle, "is the deepest law of nature; it is our supre
Likewise to use the words of a compeer of Carlyle: "In a great m
habit is a greater plague than ever afflicted Egypt."

I hasten to add my endorsement to both these observations. Noth
truth contained in the former, I think all here who know me will adn

one like myself, whose life-long pursuits unfit him for the *rôle* I have to accept and subject him to the keen edge of the truth contained in the latter, in obeying such an order as the following:

FIFTH AVENUE HOTEL,
NEW YORK, May 14, 1888.

Gen. G. M. Dodge, No. 1 Broadway:

DEAR GENERAL — The receipt this morning of the Annual Report of the proceedings of the Society of the Army of the Tennessee, at Detroit, September 14 and 15, 1887, reminds me that our next meeting will be at Toledo, Ohio, September 15 and 16, 1888, and that it is my duty to name two "members" to read at that meeting papers of interest and value for future historic reference. After scanning the list of living members, with a full knowledge of what has gone before, I have settled on you, and Surgeon Hartshorn of Cincinnati. You can choose your own subject and what I add is mere suggestion. The Civil War which we shared was only a link in the great chain of our national development. Important events preceded that war which have plainly crystallized into history; the world did not stop, but went on, and you were directly an agent in the consequences. The Pacific States had to be brought into clear harmony with the older Eastern communities, and you did much to build up the Union and Central Pacific railroads, the pioneers, followed by four other transcontinental lines, now in full operation. On this subject you can say much that will have "historic interest."

I ask you to do this, and it will be printed and perused by thousands in t who can not hear it read, but who will be edified long after you and I are

Simply write me that you will be at Toledo, September 15th, and I v of all else. As ever, your friend, W. T

But I derive encouragement to proceed when I reflect on the happy iss seemingly desperate enterprises undertaken in the past at the bidding of c to whose orders we all learned, a quarter of a century ago, to yield obedience. More than a quarter of a century ago I learned to trust in rather than my own, and my confidence is all the greater, since I know fi and observation something of his capacity for correct judgment in these as in those that were dominant during the war.

I recall the fact that it was in a measure, under his auspices, if not h proceeded from my post in the army to that of which I am now required Let me read the documentary proof of this, as well as his words of app work was done:

HEADQUARTERS MILITARY DIVISION OF THE MISSISSIP
ST. LOUIS,

Major-General Dodge:

DEAR GENERAL — I have your letter of April 27th, and I readily cons ask. I think General Pope should be at Leavenworth before you leave,

he would be at Leavenworth by May 1st, but he is not yet come. As soon as he reaches Leavenworth, or St. Louis, even, I consent to your going to Omaha to begin what, I trust, will be the real beginning of the great road. I start to-morrow for Reily, whence I will cross over to Kearney by land, and thence come in to Omaha, where I hope to meet you. I will send your letter this morning to Pope's office and endorse my request that a telegraph message be sent to General Pope to the effect that he is wanted at Leavenworth. Hoping to meet you soon, I am, Yours truly,

W. T. SHERMAN, *M. G.*

After an interval of three years, when I telegraphed General Sherman that the tracks were joined, he answered as follows:

WASHINGTON, May 11, 1869.

Gen. G. M. Dodge:

In common with millions, I sat yesterday and heard the mystic taps of the telegraphic battery announce the nailing of the last spike in the great Pacific Road. Indeed, am I its friend? Yea. Yet am I to be a part of it, for as early as 1854 I was vice-president of the effort begun in San Francisco under the contract of Robinson, Seymour & Co. As soon as General Thomas makes preliminary inspections in his new command on the Pacific, I will go out and, I need not say, will have different facilities from that of 1846, when the only way to California was by sail around Cape Horn, taking our ships 196 days. All honor to you, to Durant, to Jack and Dan Casement, to Reed, and the thousands of brave

fellows who have wrought out this glorious problem, spite of changes, s
doubts of the incredulous, and all the obstacles you have now happily sur
W. T. SHERI

More than this. Turn with me to the first volume of his memoirs, pa
says:

"Shortly after returning from Monterey, I was sent by General Smith u
City to instruct Lieutenants Warner and Williamson, of the engineers, to pu
of the Sierra Nevada Mountains, for the purpose of ascertaining the possi
that range by a railroad, a subject that then elicited universal interest.
assumed that such a road could not be made along any of the immigra
use, and Warner's orders were to look farther north up the Feather Rive
tributaries. Warner was engaged in this survey during the summer a
and had explored to the very end of Goose Lake, the source of Feather
this officer's career was terminated by death in battle with the Indians.

He was too modest to add, as I have no doubt was the fact, that th
were sent at his own suggestions; that that was the first exploring part
the field for the special purpose of ascertaining the feasibility of constr
on a portion of the line of one of the transcontinental routes; and that
preceded, by at least four years, the act of Congress making appr

explorations and surveys for a railroad route from the Mississippi River to the Pacific Ocean," the earlier fruits of which were embodied in thirteen ponderous volumes, printed at the expense of the Government.

And still further. The interest thus early manifested, continuing with unabated force, was signalized in the closing days of his official life by a summary of transcontinental railroad construction up to that date, 1883, so exhaustive as to the leading facts that I am at a loss touching the scope he expects me to give to this paper. This summary may be found in General Sherman's last report to the Secretary of War, including the exhaustive statistics of Colonel Poe. (Ex. Doc. 1, Part 2, XLVIIIth Congress, 1st Session, pages 46, 47, and 253–317.)

Under all the circumstances, therefore, I must assume that he expects me to confine my remarks to something of an elaboration of the details of the construction of those lines with which I was personally identified, more especially that which first of all linked the two oceans together.

Before proceeding with this, however, a single observation in reference to the priority of claim may not be uninteresting or out of place.

In General Sherman's summary, referred to above, it is stated that "it would now be impossible to ascertain who was the first to suggest the construction of a railway to connect the eastern portion of our country with the Pacific Coast. It is probable that the idea in some form occurred to several persons. Very recently Mr. E. V. Smalley, in his

'History of the Northern Pacific Railroad,' has presented the claim of Dr. Sa
Barlow of Granville, Mass., to this distinction, details the evidence upon w
is founded, and shows that as early as 1834 (possibly in 1833) Doctor Barlow
construction of a railroad from New York to the mouth of the Columbia R
appropriations from the Treasury of the United States. But in presentin
priority, is it not possible that the fact has been overlooked that Doctor Ba
the *Intelligencer* of Westfield, Mass., was called forth by a series of articles
subject, published in the *Emigrant* of Washtenaw County, Michigan Terri
not, therefore, that unknown writer of those articles really entitled to w
attaches to priority of suggestion?"

While this statement is true, so far as we are now able to ascertain, it
fact that, before a mile of railroad was laid in any part of the world
connecting the Atlantic with the Pacific Ocean by means of steam-carriage
if we can believe the following statement, which I quote from the memo
Mills, of February 18, 1846 (H. R. Doc. 173, XXIXth Congress, 1st Session

"The author has had the honor of being, perhaps, the first in the fiel
connect the Pacific with the Atlantic by a railroad from the head navigable
noble rivers disemboguing into the ocean. In 1819 he published a work
improvement of Maryland, Virginia, and South Carolina, connected with t
of the States of the West.

"The following extract from this work will present the idea then formed, both of the practicability and importance of this intercourse to the nation," etc.

Then follows a description, enclosed by quotation marks, of a scheme of steam locomotion between the headwaters of the drainage of the Mississippi Valley and that of the valley of the Columbia, too long for repetition on an occasion like this.

I shall confine my paper to the acts and works of those who first took hold, as citizens, and in a private capacity built the Pacific roads.

When I first saw the country west of the Missouri River it was without civil government, inhabited almost exclusively by Indians. The few white men in it were voyagers, or connected in some way with the United States army. It was supposed to be uninhabitable, without any natural resources or productiveness, a vast expanse of arid plains, broken here and there with barren, snow-capped mountains. Even Iowa was unsettled west of the Des Moines River.

It cost the Government in those days from 1 to 2 cents per pound to haul freight 100 miles to supply its posts; and I was at one time in the country between the Humboldt and the Platte nearly eight months without seeing a white man other than my own employes.

Now, from the Missouri River to the Pacific, from the Red River and the Rio Grande to the British Possessions, the territory is all under civil law.

The vast region is traversed its entire length by five great transcontinental lines of railroad. There is hardly a county in it not organized, and it is safe to say that there is

not a township that is without an occupant. Its plains teem with all the l
east of the Missouri River. It has become the great corn and wheat pr
the United States; its mountains are the producers of millions upon
precious ores, and from every range and valley iron and coal, in immense
being mined.

It is said that a railroad enhances ten times the value of the country
it runs and controls, but the value of this country has been enhanced hun
The Government has reaped from it a thousand-fold for every dollar it
and the Pacific roads have been the one great cause that made this
possible. The census of 1890 will place, in this territory, 15,000,000 of
twenty years it will support 40,000,000.

It is difficult, I doubt not, for you to comprehend the fact that the first
the Missouri River was on a raft, and at the point where stands the city of
That night I slept in the "tepee" of an Omaha Indian.

When I crossed my party over to make the first explorations not
any knowledge of Indians, of the Indian language, or of plains-craft.
surrounded our wagons, took what they wanted, and dubbed us "sq
exploring, ahead and alone, I struck the Elkhorn River about noon. Be
my rifle, saddle, and blanket, sauntered out into a secluded place in the
pony and lay down to sleep. I was awakened and found my pony gone.

upon the valley, and saw an Indian running off with him. I was twenty-five miles from my party and was terrified. It was my first experience for I was very young. What possessed me I do not know, but I grabbed my rifle and started after the Indian hallooing at the top of my voice. The pony held back, and the Indian seeing me gaining upon him, let the horse go, jumped into the Elkhorn and put that river between us.

The Indian was a Pawnee. He served under me in 1865, and said to me that I made so much noise he was a "heap scared."

Within a radius of ten miles of that same ground to-day are five distinct lines of railroad, coming from all parts of the country, concentrating at Omaha for a connection with the Union Pacific.

The first private survey and exploration of the Pacific Railroad was caused by the failure of the Mississippi & Missouri, now the Chicago, Rock Island & Pacific Railroad, to complete its project.

The men who put their money in that enterprise conceived the idea of working up a scheme, west of Iowa, that would be an inducement to capital to invest in carrying their project across Iowa to the Missouri River. They also wished to determine at what point on the Missouri the Pacific Railroad would start, so as to terminate their road at that point. The explorers adopted Council Bluffs, Iowa, as the point. All roads crossing the State for years ended their survey at that point, and all roads now built connect with that point. These explorations, commenced by me in 1853, were continued each year

TRANSFER DEPOT, COUNCIL BLUFFS, IOWA.

until 1861, when the result was seen in the framing of the bill now known as the "Law of 1862."

After this bill was passed, the Union Pacific Company was organized at Chicago, Sept. 2, 1862, and Reed, Dey, and Brayton made reconnoissances east of the mountains, Reed confining his work to the crossing of the mountains to reach the Great Salt Lake Basin. The effort to engage capital in the road was a failure, and work was suspended.

During the explorations, in 1856 or 1857, I happened to return to Council Bluffs, where Mr. Lincoln chanced to be on business. It was then quite an event for an exploring party to reach the States. After dinner, while I was sitting on the stoop of the Pacific House, Mr. Lincoln came and sat beside me, and in his kindly way and manner was soon drawing from me all I knew of the country west and the result of my surveys. The secrets that were to go to my employers he got, and, in fact, as the saying there was, he completely "shelled my woods." President Lincoln, in the spring of 1863, sent for me to come to Washington.

When I received the summons from General Grant, at Corinth, Miss., to repair to Washington, giving no reason, it alarmed me. I had armed, without authority, a lot of negroes and organized them into a company to guard the Corinth contraband camp. It had been pretty severely criticised in the army, and I thought this act of mine had partly to do with my call to Washington; however, upon reaching there and reporting to the President, I found that he recollected his conversation on the Pacific House stoop; that

he was, under the law, to fix the eastern terminus of the Pacific Road; ai was very anxious to have the road commenced and built, and desired to these questions. He finally fixed the terminus at Council Bluffs, Iowa.

In the discussion of the means of building the road I thought and private combination should be relied on, but that it must be done by th The President frankly said that the Government had its hands full. Pri must do the work, and all the Government could do was to aid. What he of me was, what was required from the Government to insure its comn completion. He said it was a military necessity that the road should be b

From Washington I proceeded to New York, and, after consulting parties who had the question before them, the bill of 1864 was drawn. passed, and under it the Union and Central Pacific railroads, constituting line, were built.

In the fall of 1864, and after the fall of Atlanta, and while on my re Point, where I had been to visit General Grant for a couple of weeks, the Chief sent me back by the way of Washington to see the President.

While the President referred to the Pacific Road, its progress, and th former visit, he gave it very little thought, apparently, and his great desi to get encouragement respecting the situation around Richmond, which very dark. People were criticising Grant's strategy, and telling how to t

I think the advice and pressure on President Lincoln were almost too much for him, for during my entire visit, which lasted several hours, he confined himself, after reading a chapter out of a humorous book (I believe called the "Gospel of Peace"), to Grant and the situation at Petersburg and Richmond.

After Atlanta, my assignment to a separate department brought the country between the Missouri River and California under my command, and then I was charged with the Indian campaigns of 1865 and 1866. I traveled again over all that portion of the country I had explored in former years, and saw the beginning of that great future that awaited it. I then began to comprehend its capabilities and resources, and in all movements of our troops and scouting parties I had reports made upon the country — its resources and topography; and I, myself, during the two years, traversed it east and west, north and south, from the Arkansas to the Yellowstone and from the Missouri to the Salt Lake Basin.

It was on one of these trips that I discovered the pass through the Black Hills, and gave it the name of Sherman, in honor of my great chief. Its elevation is 8,236 feet, and for years it was the highest point reached by any railroad in the United States. The circumstances of this accidental discovery may not be uninteresting to you.

While returning from the Powder River campaign I was in the habit of leaving my troops and train, and, with a few men, examining all the approaches and passes from Fort Fetterman south over the secondary range of mountains known as the Black Hills,

the most difficult to overcome with proper grades of all the ranges, on acc slopes and great height. When I reached the Lodge Pole Creek, up overland trail, I took a few mounted men — I think, six — and with one guide, went up the creek to the summit of Cheyenne Pass, striking south of the mountains to obtain a good view of the country, the troops and tra time passing along the east base of the mountains on what was known a and the Laramie trail.

About noon, in the valley of a tributary of Crow Creek, we discovere at the same time, discovered us. They were between us and our trai danger and took means immediately to reach the ridge and try to hea follow it to where the cavalry could see our signals. We dismounted an the ridge, holding the Indians at bay, when they came too near, with o It was nearly night when the troops saw our smoke signals of danger a relief; and in going to the train we followed this ridge out until I discov to the plains without a break. I then said to my guide that if we sa believe we had found the crossing of the Black Hills — and over this rid Lone Tree and Crow creeks, the wonderful line over the mountains over two years all explorations had failed to find a satisfactory crossing The country east of it was unexplored, but we had no doubt we could rea

In 1867, General Augur, Gen. John A. Rawlins, Colonel Mizner, a

AMES MONUMENT, SHERMAN, WYOMING.— On the Union Pacific System.

crossing the plains with me, reached the point where I camped that nig there the 4th of July, and General Rawlins made a remarkable speech c the day. We located there the post of D. A. Russell and the city of Chey time the nearest settlement was at Denver, 150 miles away; and while w Indians swooped down on a Mormon train that had followed our trail, an its men; but we saved their stock, and started the graveyard of the futur

The explorations by the Government for a Pacific Railroad are all ma report, long since published and open to all. They were the basis explorations of all the transcontinental lines, except the Union Pacific, t that of the forty-second parallel of latitude. That line, and the cou Arkansas to the Yellowstone, was explored and developed mainly by priv and it is by far the most practicable line crossing the continent — the sho of lightest curvature, and lowest grades and summits. It is not, in an engin view, the true line from the Atlantic to the Pacific, but in a commercial poir

In an engineering point of view we demonstrated, before the year 186c line was up the Platte to its forks, to which point the Union Pacific is now the North Platte and Sweetwater to the South Pass, and then down the (where the Oregon Short Line now runs) to the Columbia, and then t Portland. The Union and Central were built for commercial value, and shortest and quickest line from ocean to ocean.

The line of the Central was controlled almost entirely by the development of the mining industries in California and Nevada until it reached the Humboldt; then its natural course would be to reach Salt Lake and the Mormon settlements. The Union Pacific objective point was the Pacific Coast by the way of the Great Platte Valley and Salt Lake.

Every mile of the Pacific roads that received subsidies from the Government had to have the approval of the Government three different times through its selected officers before 1 cent could be received or one acre of land certified.

1st. The preliminary survey, showing the general route of the line, had to be accepted as in compliance with the law and satisfactory to the President.

2d. As each section of 50 or 100 miles was finally located on the ground, this being the actual line to be built upon, which could not be deviated from, it had to be filed with the Interior Department, receive the approval of its Secretary and the great seal of the country.

Finally, when a section of twenty or more miles was completed and equipped as required by law, the United States Government sent out three expert commissioners, who examined again, not only all materials put in it, its method of construction, and its road as constructed, but went behind all other approvals that had been made, and assumed the right of might, not law, to disapprove what had before been approved, and upon which approval the road had been constructed.

For the sake of peace and to avoid delays we submitted and made demanded, which, to their credit, I must say, were very few. The grades the cuts, fills, bridges, ties, rails, spikes, joints — everything had to be up to adopted by the Government, a standard adopted on the advice, in several c who had never seen the country. And, after the road was completed, in had to be changed to overcome one great obstacle that one unacquain country would never dream of — the question of snow. We had to study every mountain side, every valley, to find from the currents which was th and which the barren; and over the whole 1,500 miles of line located Pacific, for three winters we kept engineers in tents or dug-outs watching six months the drift of the snow and water to be overcome, and the safe most effectual methods of doing it.

The charter of 1884 provides that the loan in bonds shall change $16 $32,000 at the east base of the Rocky Mountains and the west base of the S

When we reached the mountains a series of questions arose as to how th be determined. The eastern base was determined by Mr. Blickensder appointed by the Government. After examining the country he dec right at the foot of the mountains, where the heavy grades to overcome t the Black Hills, were made necessary — a very proper decision.

The west base of the Sierra was located near Sacramento, where th

mountains reached into that valley, or where, you might say, the first approach to the mountain begins, but long before the heavy grades commenced.

A good story is told, the truth of which I will not undertake to vouch for, in relation to the fixing of the base.

By the original railroad act, as we have noticed, the President was to fix the point where the Sacramento Valley ended and the foothills of the Sierra Nevada began. Chief Engineer Judah, in his report, had designated Barmore's, thirty-one miles from Sacramento, as the beginning of the mountains. This corresponded with a decision of the Supreme Court of the United States, made in April, 1864, in the case of the Liedsdorff grant. This grant, by Mexican authority, was bounded by the foothills on the east. The contestants of the grant attempted to fix the eastern boundaries at Alder Creek, eight miles nearer Sacramento. The Supreme Court decided the foothills commenced about thirty miles from that city. Several attempts were made by Mr. Sargent, then a member of Congress, and since United States Senator, soon after the passage of the original act, to bring the attention of President Lincoln to this subject, but the President's constant occupation, with weightier duties forced upon him by the great war, prevented his action. The time, however, came when it could no longer be delayed.

Owing to the increase of subsidy among the hills and mountains, it was important to the railway company that the foothill should begin as near as possible to Sacramento. The senator claims the credit of moving the mountains from Barmore's to Arcade Creek,

a distance of twenty-four miles. His relation of the affair to his friends is t
was engaged with a map when the senator substituted another, and demo
and the statement of some geologist that the black soil of the valley and t
the hills united at Arcade. The President relied on the statements giv
decided accordingly. "Here, you see," said the senator, "how my pe
Abraham's faith removed mountains."

Reconnoissances made in 1862–63–64 had demonstrated that a serious qu
arise in reaching the Humboldt Valley from the western foot of the Wasat
in the Salt Lake Basin. Should the line go north or south of the lake? T
Church and all of its followers, a central power of great use to the tra
roads, were determinedly in favor of the south line. It was preached fro
and authoritatively announced that a road could not be built or run north
But our explorations in an earlier day unqualifiedly indicated the north sid
exhaustive examination was made south and only one line run north, it be
line to the California State line surveyed in 1867.

The explorations by parties south of the lake, and the personal examin
chief engineer, determined that it had no merits as compared with the no
on such report the north line was adopted by the company and acc
Government.

Brigham Young called a conference of his church and refused to accept

prohibited his people from contracting or working for the Union Pacific, and threw all his influence and efforts to the Central Pacific, which just at that time was of great moment, as there was a complete force of Mormon contractors and laborers in Salt Lake Valley competent to construct the line 200 miles east or west of the lake, and as the two companies had entered into active competition, each respectively to see how far east or west of the lake they could build, that city being the objective point and the key to the control of the commerce of that great basin.

The Central Pacific Company entered upon the examination of the lines long after the Union Pacific had determined and filed its line, and we waited the decision of their engineers with some anxiety. We knew they could not obtain so good a line, but we were in doubt whether, with the aid of the Mormon Church and the fact that the line south of the lake passed through Salt Lake City, the only commercial capital between the Missouri River and Sacramento, they might decide to take the long and undulating line; and then would arise the question as to which (the one built south, the other built north, and it would fall to the Government to decide) should receive the bonds and become the transcontinental line. However, the engineers of the Central Pacific, Clements and Ives, took as strong ground, or stronger than we, in favor of the north line, and located almost exactly upon the ground the Union Pacific had occupied a year before; and this brought the Mormon forces back to the Union Pacific, their first love.

The location of the Union Pacific was extended to the California State line, and that

of the Central Pacific to the mouth of Weber Cañon. The Union Pac opened and most of the line graded to Humboldt Wells, 219 miles west o the Union Pacific met the track of the Central Pacific at Promontory Summ west of the Missouri River, and 638 miles east of Sacramento, on May 9 wonder of America, and the utter astonishment of the whole world — co entire line seven years before the limit of time allowed by the Government

On the occasion of the completion of the road there assembled on the bl side representatives of nearly all civilized nations. As the last spike was nection was made with every telegraph office between the Atlantic and th every blow was heard throughout the land. To the representatives of th came over the wires the congratulations of authorities, officials, and emine every country that could be reached by wire, and among them all was one above all others — the telegram which I have already read in your hearin know what it is to receive commendation and promotion on the field of battle, i your enemy, can appreciate the satisfaction conferred by such a message from s

How well we did our work I leave to the committee, who, after an examination of it, submitted its report to the Government, to say, as follows

"The foregoing shows that the location of the Union Pacific Railroad is in with the law, as a whole and in its different parts, the most direct, central, and that could be found between Omaha and the head of Great Salt Lake.

DRIVING THE LAST SPIKE, AT PROMONTORY, UTAH, MAY, 1869.

"Taken as a whole, the Union Pacific Railroad has been well const general route for the line is exceedingly well selected, crossing the Roc ranges at some of the most favorable passes on the continent, and possessin for easy grades and favorable alignments unsurpassed by any other rai similarly elevated grounds. The energy and perseverance with which t been urged forward, and the rapidity with which it has been executed parallel in history. In the grandeur and magnitude of the undertaking it ha equaled, and no other line compares with this in the arid and barren cha country it traverses, giving rise to unusual inconveniences and difficulties a the necessity of obtaining almost every requisite of material, of labor, and of its construction from the extreme initial point of its commencement.

"Deficiencies exist, but they are almost without exception those incider roads, or of a character growing out of the peculiar difficulties encountered o connected with the unexampled progress of the work, a matter of the greates and highly creditable to the able managers of the company, and they can al at an outlay but little exceeding that which would have obviated them instance, but at the cost of materially retarding the progress of the work. circumstances it is much more a matter of surprise that so few mistakes we so few defects exist than it would be had serious deficiencies been of m occurrence; and the country has reason to congratulate itself that this

of national importance is so rapidly approaching completion under such favorable auspices.

"We are, very respectfully, your obedient servants,

G. K. WARREN, *Brevet Major-General, U. S. A.*,
J. BLICKENSDERFER, Jr., *Civil Engineer*,
JAMES BARNES, *Civil Engineer*,
Special Commissioners Union Pacific Railroad.

"Hon. O. H. BROWNING,
Secretary of the Interior."

Another and even greater testimonial to the proper construction of the road is the fact that when the Canadian Pacific was about to be built, the Dominion government, some time in 1873 or 1874, examined the Union Pacific Railroad carefully, and, in making its contract for the building of the Canadian Pacific, used the Union Pacific as its standard; and there occurs a clause in their contract which provides that the Canadian Pacific, when completed, shall be equal in all its parts (in roadbed, structures, alignments, and equipment) to the Union Pacific, as found in the year 1874 — and that government is now making a settlement with its contractors, and claiming that the Canadian Pacific has not yet been brought to that standard.

When we consider that England and its colonies have the reputation of building the most substantial roads in the world, this fact must certainly go to the credit of the

builders of the Union Pacific, and is a severe comment upon the attacks th made upon the Pacific railroads by our own Government and people.

The day for estimating the benefit of these lines to the nation, or com with anyone's foresight or predictions of the revolution they would make i commerce, and population of the country, has long since passed.

Some of the benefits derived from the building of these roads are:

1. The change of climate.

2. The bringing under cultivation of millions upon millions of acres of making homes for the numerous immigrants to the country.

3. The development of vast mineral belts that now supply the world with and copper.

4. The development of immense quantities of coal, anthracite and bitu are already supplying the population and industries between the Missouri Ri Pacific.

5. The discovering, yearly, of immense beds of all kinds of ores that go i tin, earthen, and other industries. There seems to be no metal that Mountains can not furnish the ore to produce.

6. The empire that the roads have made possible will, in the near futur occupied territory, population, wealth, and savings, all those of the country Missouri River as measured to-day.

In the last two years the financial strides have been remarkable. The Government is daily adding to its Treasury more than all the interest upon all the sums it has expended in developing it, and does not yet know what it has acquired; nor does it yet comprehend in any degree what it will in years to come pay into our Treasury. It has already built up four great commercial centers, each controlling territory 500 miles in diameter — one on the Missouri River, one in Colorado, one in Salt Lake Basin, and one on the Pacific Coast; and three more are in their infancy — one on the Rio Grande, one in Montana, and another in Oregon. The banking capital and deposits in these centers illustrate their progress. They amount to over $100,000,000 to-day.

On the completion of the road, at the request of the Board of Directors, we made an estimate of earnings for five and ten years after completion.

By claiming the overland trade of all the British Islands, of China and Japan, and taking that of the entire Pacific Coast, we estimated the annual earnings in five years at $5,000 per mile. We gave 80 per cent of this to through traffic, and 20 per cent to local. Within ten years the local development brought the earnings up to $12,000 per mile, and to-day the through traffic is not 5 per cent of its gross earnings. In 1887 the Union Pacific system earned a grand total of $28,557,766; the Central and Southern Pacific, $37,930,162; the Atchison, Topeka & Santa Fé, $18,461,366; the Northern Pacific, $12,789,447, and the Texas & Pacific, $6,200,000.

Nearly one-half as much more was earned by local roads that developed a portion of

each State and Territory, but were not part of the continental system. The
and development of that vast empire, not yet thirty-five years old, has passe
figures, and we simply look upon it as two great commercial zones followin
great empire, between the lakes and the Missouri River, whose developme
the admiration and wonder of the world.

The building of the Pacific roads has changed the climate between t
River and the Sierra Nevada. In the extreme West it is not felt so much
the Missouri River and the Rocky Mountains. Before settlement had devel
country west of the Missouri River could raise very little of the main crop
irrigation. From April until September no rain fell. The snows of the
furnished the streams with water and the bunch-grass with sufficient dampne
it until July, when it became cured and was the food that sustained all an
the plains, summer and winter.

I have seen herds of buffalo, hundreds of thousands in number, living off
that they obtained by pawing through two feet of snow on the level. It was
that induced the stocking of immense ranches with cattle. Buffalo never c
character of the grass, but herds of cattle did, so that now, on the ranges, v
the bunch or buffalo grass remains.

Since the building of these roads, it is calculated that the rain belt moves
the rate of eight miles per year. It has now certainly reached the plains c

and for two years the pioneers of that high and dry State have raised crops without irrigation, right up to the foot of the mountains.

Salt Lake since 1852 has risen nineteen feet, submerging whole farms along its border and threatening the level desert west of it. It has been a gradual but a permanent rise, and comes from the additional moisture falling during the year — rain and snow. Professor Agassiz, in 1867, after a visit to Colorado, predicted that this increase of moisture would come by the disturbance of the electrical currents, caused by the building of the Pacific railroads and settlement of the country.

The Union Pacific and the Central Pacific were fortunate in selecting a class of young men for their work, some of them hardened by five years' experience in the war, whose whole soul and interest were in it. They commenced first in the exploring and engineering parties, and finally landed as chiefs in some part of the work.

On the Union Pacific were Dey, Reed, Hurd, Blickensderfer, Morris, McCartney, Eddy, House, Hodges, Hudnut, Maxwell, Brown, Appleton, Clark, Hoxie, Snyder, the Casements, and many others under them. Some of them laid down their lives in the work, all reached fame in after years, and were builders and operators on all the great transcontinental lines, including the Canadian Pacific.

On the Central Pacific were Judah, Montague, Clements, Ives, Gray, Towne, and others that I can not name. Some of these men have met five times in making connections that completed the great transcontinental lines. I found some of the men who made the first

connections at Promontory, again at Sierra Blanca, at the joining of the Te
and Southern Pacific, and still again at Emery's Gap the present year, in con
Orleans and the Gulf with Denver. On the Atchison & Topeka, and on the
well as on the Canadian Pacific, some of the same men took part in laying th
rails.

The men who made possible this work, who threw their fortunes, their
reputations into it, will one day stand in civil life like our great leaders in the
uments to their enterprise dot the country between the Missouri River an
Mountains, between the Pacific and the Wasatch. They were the men wh
possible a population, within the next twenty years, between the Missouri Ri
Pacific Coast, of fifty millions of people. They have been libeled, abused,
in some cases, bankrupted and driven to their graves; but their works stan
monuments will yet come — the Ameses, Dillon, Duff, Durant, Atkins, De
Dix, Brooks, Stanford, Huntingdon, Hopkins, and Crocker.

I do not state this alone on my own knowledge, but I appeal to the most
the most helpful of all the generals in this great enterprise, one who knew t
who saw them, who watched them at their work, will tell you that they sh
the same praise for their acts in civil life that he and his followers did for th
in the war. The two were inseparable, and the last could not have been but

Many have supposed that they engaged in it for purely mercenary motiv

money they could make out of it; but I say to you that their hearts and patriotism were in the work, as much as yours were in the war, and if they had invested their money and credit in any other business as they did in this, they would have been the gainers.

They and their subordinates were determined to build a first-class road. I have plenty of evidence to sustain this beyond question. The president, Oliver Ames, and the Board of Directors sustained the engineers in building a road of the lowest grades and lightest curvature the country would admit. When some of those interested desired to use the maximum authorized by law and build a surface road, the Board invariably stood by for the lines of the engineers as those offering the greatest commercial value.

The instructions given me by Oliver Ames and Sidney Dillon, one at the head of the railroad company and the other at the head of the construction company, were invariably to obtain the best line the country afforded, regardless of the expense. Oakes Ames once wrote me when it seemed almost impossible to raise money to meet our expenditures: "Go ahead; the work shall not stop, even if it takes the shovel shop."

The Ameses were manufacturers of shovels and tools, and their fortunes were invested in that business; and, as we all know, the shovel shop went. When the day came that the business of the Ameses should go or the Union Pacific, Oakes Ames said: "Save the credit of the road — I will fail."

It took a man of courage and patriotism to make that decision and lay down a reputation and business credit that was invaluable in New England, and one that had

come down through almost a century. To him it was worse than death; blow which, followed by others, put him in his grave.

To emphasize these observations, permit me to quote a brace of para letter dated January 6, 1859, addressed to Hon. John Sherman, M. C., and through the *National Intelligencer*. It was from his brother, then unknown is even yet one of the most remarkable and instructive short papers to be literature of transcontinental railway construction. He gave many weighty a railway to the Pacific should be built, but thought it could not be done u the nation. "It is a work of giants," he sententiously declares, "and Und only giant I know who can or should grapple the subject." That paper light of later events, would stamp its author as a far-seeing statesman and a engineer, and I shall ask his permission to record it as a part of this paper. declarations taken from it show how the project was viewed in 1859:

"It so happens that for the past ten years the Sierra Nevada has been cr possible point by miners in search of gold, by emigrants going and co skillful and scientific men. I, myself, have been along a great part of th have no hesitation in saying that there are no passes by which a railway, by the most powerful locomotive now in use, can be carried through the S unless at the extreme head of the Sacramento, near the town of Shasta or or at the extreme head of the San Joaquin, near the Tejon.

"I now assert my belief that the great railroad will not receive enough net profits to pay interest on its cost. Yet I will not attempt an estimate of either the cost of the road or its income. I believe the cost will not fall much, if any, short of $200,000,000, the interest on which (Government bonds, say 5 per cent per annum) would be $10,000,000."

The experience of the war made possible the building of this transcontinental railroad, not only physically but financially. The Government, already burdened with billions of debt, floated $50,000,000 more, and by this action it created a credit which enabled the railroad company to float an equal amount, and these two credits, when handled by men of means and courage, who also threw their own private fortunes into the scale, accomplished the work.

If it had been proposed, before the war, that the United States should lend its credit, and issue its bonds to build a railroad 2,000 miles long across a vast, barren plain only known to the red man, uninhabited, without one dollar of business to sustain it, the proposition alone would have virtually bankrupted the nation.

Possibilities of finance, as developed during the war, made this problem not only possible, but solved and carried it out, and accomplished in three years a feat which no plan ever before suggested proposed to accomplish in less than ten years; and while it was being accomplished, the only persons who had real, solid, undoubted faith in its completion were that portion of the nation who had taken active part in the war.

Necessity brought out during the war bold structures that in their rough were models

DRIVING THE LAST SPIKE, AT PROMONTORY, UTAH, MAY, 1869.

of economy in material and strength. In taking care of direct and lateral strains by positions of posts and braces, they adopted principles that are used to-day in the highest and boldest structures; and I undertake to say that no structure up to date has been built which has not followed those simple principles that were evolved out of necessity, though reported against during the war by the most experienced and reliable engineers of the world.

A few bold spirits backed the enterprise with their fortunes and independent credit. They were called fools and fanatics, and Oakes Ames — the real pluck of the work — said to me once: "What makes me hang on is the faith of you soldiers," referring, at the time, to the support the army was giving us, led by Grant, Sherman, Sheridan, Pope, Thomas, Augur, and Crook, and all who had direct communication with us on the plains. There was nothing we could ask them for that they did not give, even when regulations did not authorize it, and it took a large stretch of authority to satisfy all our demands.

The commissary department was open to us. Their troops guarded us, and we reconnoitered, surveyed, located, and built inside of their picket line. We marched to work to the tap of the drum with our men armed. They stacked their arms on the dump and were ready at a moment's warning to fall in and fight for their territory.

General Casement's track train could arm a thousand men at a word; and from him, as a head, down to his chief spiker, it could be commanded by experienced officers of every rank, from general to a captain. They had served five years at the front, and over

half of the men had shouldered a musket in many battles. An illustration
to me after our track had passed Plum Creek, 200 miles west of the Missouri
Indians had captured a freight train and were in possession of it and its
happened that I was coming down from the front with my car, which wa
arsenal. At Plum Creek Station word came of this capture and stopped
train were perhaps twenty men, some a portion of the crew, some wh
discharged and sought passage to the rear. Nearly all were strangers t
excitement of the capture and the reports coming by telegraph of the b
brought all men to the platform, and when I called upon them to fall in, t
and retake the train, every man on the train went into line, and by his posi
that he was a soldier. We ran down slowly until we came in sight of the tr
the order to deploy as skirmishers, and at the command they went forward
and in as good order as we had seen the old soldiers climb the face
under fire.

Less than ten years before, General Sherman had suggested a *differen*
disposing of the Indian. Writing to his brother, he said:

"No particular danger need be apprehended from Indians. They will no
and rob, and may occasionally attack and kill stragglers; but the grading
will require strong parties, capable of defending themselves; and the supp
road and maintenance of the workmen will be carried in large trains of wag

went last year to Salt Lake, none of which were molested by Indians. So large a number of workmen distributed along the line will introduce enough whisky to kill off all the Indians within 300 miles of the road."

Railroads first built in the United States have been remunerative only in a small way, and have grown and been supported mostly by the vast development of new territory. The advance lines are usually bankrupt, but they feed trunk lines by which they are financially supported, not because of the amount they can earn for themselves, but for what is paid to their connection, as every pound of delivered freight and every passenger carried to and from the connection is additional and new business.

The unfriendliness of Congress since 1870, and of all the Western States since 1880, has been overcome by the world west of the Missouri River, newly conquered and occupied. Now their hostile legislation will soon have its reactionary effect upon themselves, and I predict that the demagogues, who delight to legislate and destroy property that they have no interest in, will soon see the result in their own homes; for these, like the people east of the lakes, are becoming possessed of property and wealth through capital that comes to them developing their country.

Railroad investment is creeping west of the lakes, and when the people legislate upon something they own or are interested in, no matter how small their interest, they will sustain and support it. I look to the day, not far distant, when, in Kansas, Nebraska, Iowa, Texas, Minnesota, and Missouri, it will be as unpopular to legislate to destroy

capital invested in means of transportation as it is to-day in Ohio, New Y
New England States.

The changes in the railroad world have been caused mostly by the impro
of transportation made necessary during the war; and the great principles t
have taught the American people that there was no problem in finance or
the development of the country so great that its people did not feel able t
master it.

Railways have been known since the days of the Romans. The tracks wer
of cut stone. One hundred and fifty years ago iron rails took their place; and
railroad was created by the Stephensons when they built the locomotive
Civil and mechanical engineering have kept pace with the growth of the
now there is no river so deep or mountain so high that they, combined, ca
under or over it. One of the principal geniuses in solving the problem for
steam (Ericsson, the companion of Stephenson) is still alive, and Horatio
pulled the throttle of the first locomotive on its first trip made in the Unite
still with us. When we consider that, from that day to this, over 150,000 miles
have been built in the United States, one can comprehend the strides the
made up to date, but its future possibilities can not be imagined.

I can not close this paper more appropriately than by reading to you the fi
my last report to the Board of Directors, written upon the completion of the

Central Pacific roads. I submit that if written to-day it would not be materially changed. It is as follows:

In 1853 Henry Farnum and T. C. Durant, the then contractors and builders of the Missouri River Railroad in Iowa, instructed Peter A. Dey to investigate the question of the proper point for the Mississippi & Missouri River Road to strike the Missouri River, to obtain a good connection with any road that might be built across the continent. I was assigned to the duty, and surveys were accordingly extended to and up the Platte Valley to ascertain whether any road built on the central or then northern line would, from the formation of the country, follow the Platte and its tributaries over the plains, and thus overcome the Rocky Mountains. Subsequently, under the patronage of Mr. Farnum, I extended the examination westward to the eastern base of the Rocky Mountains and beyond, examining the practicable passes from the Sangre de Christo to the South Pass; made maps of the country, and developed it as thoroughly as could be done without making purely instrumental surveys. The practicability of the route, the singular formation of the country between Long's Peak, the Medicine Bow Mountains, the Bridger Pass on the south, and Laramie Peak, and the Sweetwater and Wind River ranges on the north, demonstrated to me that through this region the road must eventually be built. I reported the facts to Mr. Farnum, and through his and his friends' efforts the prospect for a Pacific railroad began to take shape.

In after years, when the war demonstrated the road to be a military necessity, and the

Government gave its aid in such munificent grants, surveys were extended tl country previously explored, its resources developed, its hidden treasures l light, and its capabilities for the building of a railway to the Pacific fully den

In doing this over the country extending from the Missouri River to the State line, and covering a width of 200 miles north and south, and on the genera of the forty-second parallel of latitude, some 15,000 miles of instrumental lines run, and over 25,000 miles of reconnoissances made.

In 1863 and 1864 surveys were inaugurated, but in 1866 the country was syst occupied; and day and night, summer and winter, the explorations were pushe through dangers and hardships that very few at this day appreciate, as every n be run within range of the musket, as there was not a moment's security. In n surveys numbers of our men, some of them the ablest and most promising, w and during the construction our stock was run off by the hundred, I might thousand. As one difficulty after another arose and was overcome, bot engineering, running, and construction departments, a new era in railroac was inaugurated.

Each day taught us lessons by which we profited for the next, and our adv improvements in the art of railway construction were marked by the progr work—40 miles of track having been laid in 1865, 260 in 1866, 240 in 1867, inc ascent to the summit of the Rocky Mountains, at an elevation of 8,247 feet

ocean; and during 1868 and to May 10, 1869, 555 miles, all exclusive of side and temporary tracks, of which over 180 miles were built in addition.

The first grading was done in the autumn of 1864, and the first rail laid in July, 1865. When you look back to the beginning at the Missouri River, with no railway communication from the East, and 500 miles of the country in advance without timber, fuel, or any material whatever from which to build or maintain a road, except the sand for the bare roadbed itself; with everything to be transported, and that by teams or at best by steamboats, for hundreds and thousands of miles; everything to be created, with labor scarce and high, you can all look back upon the work with satisfaction and ask, under such circumstances, could we have done more or better?

The country is evidently satisfied that you accomplished wonders and have achieved a work that will be a monument to your energy, your ability, and to your devotion to the enterprise through all its gloomy as well as its bright periods; for it is notorious that, notwithstanding the aid of the Government, there was so little faith in the enterprise that its dark days — when your private fortunes and your all was staked on the success of the project — far exceeded those of sunshine, faith, and confidence.

This lack of confidence in the project, even in the West, in those localities where the benefits of its construction were manifest, was excessive, and it will be remembered that laborers even demanded their pay before they would perform their day's work, so little faith had they in the payment of their wages, or in the ability of the company to succeed

in its efforts. Probably no enterprise in the world has been so maligned, sented, and criticised as this; but now, after the calm judgment of the Americ is brought to bear upon it, unprejudiced and unbiased, it is almost without pronounced the best new road in the United States.

Its location has been critically examined, and although the route was in a com short time determined upon, as compared with that devoted to other similar pr in regard to the correctness of the general route, no question is ever raised; in the details of its location, 730 miles of which were done in less than six mon received the praise of some of the ablest engineers of the country. Its d minor ones, easily remedied, and all the various commissions, some of them of able and noted engineers, have given the company due credit in this although they may have attacked it in others, and to-day, as in the past, the need fear no fair, impartial criticism upon it, or no examination made by men and integrity, or such as are masters of their profession.

That it yet needs work to finally complete it no one denies, but whatever is has been or is being done.

Its future is fraught with great good. It will develop a waste; will bind to two extremes of the nation as one; will stimulate intercourse and trade, and mony, prosperity, and wealth to the two coasts. A proper policy, systemat persistently followed, will bring to the road the trade of two oceans, and will

the business it can accommodate; while the local trade will increase gradually until the mining, grazing, and agricultural regions through which it passes will build up and create a business that will be a lasting and permanent support to the country.

After General Dodge's paper had been read, General Raum (addressing the president) said:

"I move you, sir, that the hearty thanks of this Society be extended to General Dodge for his paper; that it be spread upon the record, and be printed with the annual report."

The motion of General Raum was seconded and unanimously adopted.

The president (General Sherman) said:

"I need not speak to an audience such as this in praise of the historic paper just read by General Dodge. It so happens that I was, before the Civil War, during it, and since, deeply interested in the great problem of a Pacific railroad. Every word of General Dodge's paper is true, to my personal knowledge, and I indorse every proposition he has made.

"When the Civil War was over, you all must remember that I was stationed at St. Louis, in command of all the troops on the Western plains as far out as Utah. I found General Dodge as consulting engineer of the Union Pacific Railroad, in the success of which enterprise I felt the greatest possible interest. I promised the most perfect protection, by the troops, of the reconnoitering, surveying, and construction parties, and made frequent personal visits on horseback and in ambulance, and noticed that the heads

of all the parties had been soldiers during the Civil War. I firmly believe that t
War trained the men who built that great national highway, and as General Do
so graphically described, he could call on any body of workmen to 'fall in,' 'tak
'form platoons and companies,' 'deploy as skirmishers,' and fight the marauding
just as they had learned to fight the rebels down at Atlanta. I will not claim
were of the Army of the Tennessee, but the heads of parties were all, or nea
Union Soldiers.

"I was particularly interested in that part of General Dodge's paper whe
described his discovery of the way to cross the Black Hills beyond Cheyenne (th
no Cheyenne then). He was limited by the law to 116 feet grade to any mile.
of following the valley of Lodge Pole Creek, as all previous engineers had done, h
the upper or anticlinal line, instead of the lower or synclinal line. This was a
of *genius*, by which he surmounted the Rocky Mountains at a grade of eighty fee
mile, whereas by any other route then known he would have been forced to a g
200 feet, or to adopt *short* curves through Laramie Pass.

"The Union and Central Pacific railroads were the pioneer transcontinental r
America, and every man who did his part should receive all honor. Now there
transcontinental railroads, the last the Canadian Pacific."

Driving the Last Spike of the Union Pa

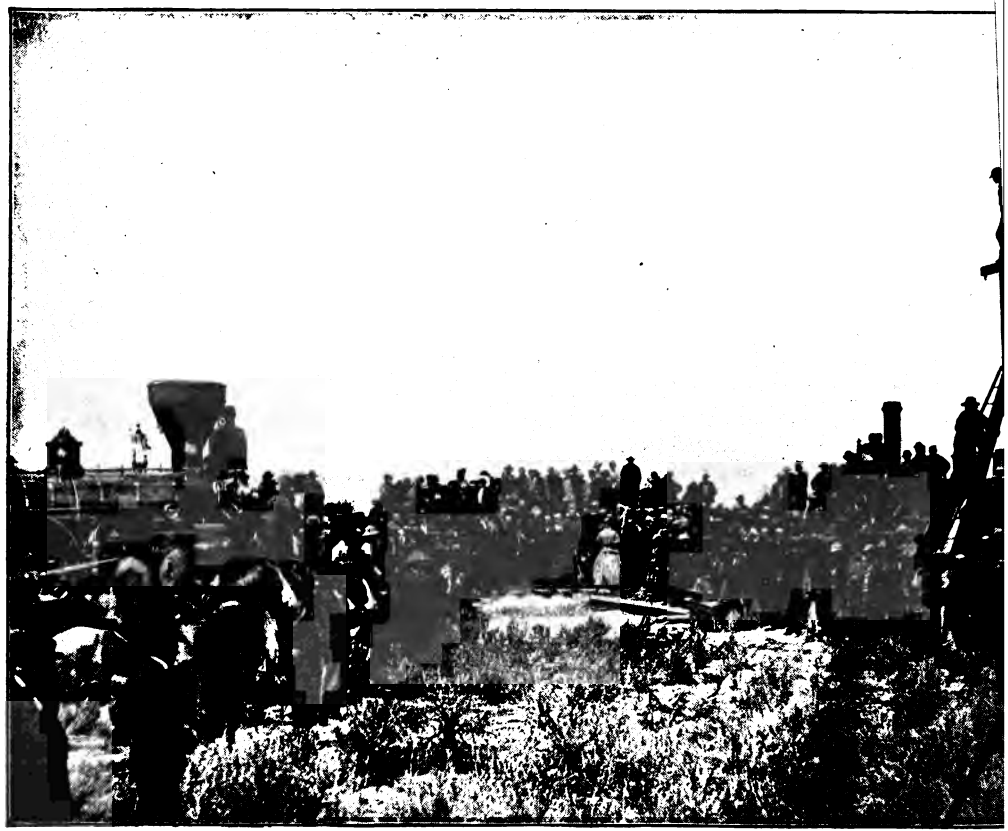
BY SIDNEY DILLON.

Reprinted from Scribner's Magazine, August, 1892.

The traveler over the Union Pacific Railroad in 1892 sees very few things as the physical features and general topography of the country through which it remind him of the scenes which presented themselves to the view of those who c the first excursion party over the completed road, and who witnessed, on May at Promontory Point, Utah, the formal ceremony of driving the last spike. now marks the spot where this ceremony took place, and even the small statio as Promontory is at some distance from the point where the connection bet two transcontinental roads was originally made. The whole aspect of the coun the Missouri River to Salt Lake, has marvelously changed. Where there were t tents, there are now well-built, substantial, and prosperous towns, and instea great desert wastes, supposed to be beyond reach of cultivation, one may no almost unbroken stretch of corn fields and cultivated lands.

It is not too much to say that the opening of the Pacific Road, viewed simply in its relation to the spread of population, development of resources, and actual advance of civilization, was an event to be ranked in far-reaching results with the landing of the Pilgrims, or perhaps the voyage of Columbus. In less than twenty-five years it has accomplished results which have influenced the whole world more than what happened in the century following the landing of the Pilgrims.

The five or six hundred men who saw the connection made at Promontory were strongly impressed with the conviction that the event was of historic importance; but, as I remember it now, we connected it rather with the notion of transcontinental communication and trade with China and Japan than with internal development, or what railroad men call local traffic. We were somewhat visionary, no doubt, but none of us dreamed that the future of the Pacific roads depended more on the business that would grow out of peopling the deserts it traversed, than on the through traffic. We have not been disappointed in the stupendous results attained, but they are different from those we looked for, and of vastly greater consequence to the country. Our expectations concerning Asiatic trade, it must be owned, have fallen short of fulfillment, but the enormous development of local business has surpassed anything we could have ever dreamed of. Instead of being incidental and subordinate, it is the chief business, the main dependence of the road, the through business for 1891 being only about 5 per cent, and the local 95 per cent of the whole volume of traffic.



DRIVING THE LAST SPIKE, AT PROMONTORY, UTAH, MAY, 1869.

Nearly forty years earlier Asa Whitney, reading in China the account of the first experiment in railroad building in England, began to reflect upon the enormous changes the new invention made possible in bringing together remote sections of the globe; and, naturally enough, his thoughts turned upon the possibilities opened to Asiatic commerce. So impressed was he with the feasibility of a railroad across the American Continent as a means of rapid communication between the Asiatic ports and European countries, that he set to work at once compiling statistics concerning the trade of China, Japan, and India, with a view of directing public attention to the subject. He began his public work somewhere about 1841, and in 1845 secured a hearing before Congress. It was due almost entirely to his persistent efforts that the first appropriation for surveys was made in 1853. His proposition was to build a railroad from Lake Superior to Puget Sound, in consideration of a grant of land from the Government to a certain amount over the whole line. Experience has shown that this plan was far from feasible, but he clung to it with the faith of an enthusiast, keeping it before the people and before Congress until he had sacrificed his own private fortune and become discouraged. About the time the present charter was passed, he disappeared from the scene.

But the idea that a transcontinental railroad must depend chiefly upon the commerce of China and Japan continued to possess the public mind. How little thought was given to the development of the vast territory between the Missouri River and the Pacific is indicated by the fact that the examination and surveys made by order of Congress

included the isthmus routes and the possibilities for railroads or canals on t stretch of country from Panama north to the Canada line. The main thing w develop the country and make it habitable, but to get across it as quickly as The gold discoveries in 1849, the large emigration in consequence, and the adr California as a State, added an important element to be considered, and co largely toward keeping the subject in the public mind. But the real object continued to be China and Japan and Asiatic trade.

Congress spent large sums of money between 1853 and 1860 in surveys of th between the Missouri River and the Pacific Ocean, the results of which were p large volumes, profusely illustrated, and distributed to the people at Go expense. Beyond these tentative steps nothing could be effected. Political c prevented further progress. In the first place, the agitation of the slavery occupied the attention of Congress to the exclusion of everything else; and o sectional jealousies engendered by that controversy had arisen differences as to to be adopted — whether a northern, southern, or middle — which were irrec Nothing could be done as long as those conditions continued. The South, w then in the control of the Government, would never consent to any northern r not a dollar of capital could be enlisted for the southern route recommended by of War Jefferson Davis.

But politics, which had so much to do in preventing progress, took a turn

which resulted in the enterprise being put in practicable shape and hurried forward with unexampled speed to completion. The charter of 1862 was rushed through Congress because the war had disclosed the dangers of the existing situation. Our Pacific Coast and the new States of California and Oregon were from twenty to twenty-four days out of reach, and only accessible then by transit through a foreign country. The coast was almost entirely undefended, and the Trent affair had awakened anxiety in the direction of a war with England, which the Confederate Admiral Semmes had intensified by the destruction of nearly a hundred whaling vessels in the Pacific Ocean. The citizens of the new States were urgent for some action by Congress, and President Lincoln publicly and privately pressed the importance of the subject upon members of Congress and upon capitalists.

China and Japan were for the moment lost sight of, and the ruling thought in the public mind was as to the necessity for strengthening the Union by bringing its remotest coasts in quick and easy communication, as soon as possible, and at any cost. Even then the possibility of making the great intervening deserts habitable and populous and fruitful of profitable traffic had not entered men's minds. Investigation showed that the transportation of mails, troops, munitions, and supplies between the Missouri River and the Pacific Ocean was costing the Government upward of $7,000,000 annually. It was estimated that the road could be built for $100,000,000. So that simply to do its own work the Government, had there been no constitutional hindrance, could well afford to

issue its 6 per cents for the amount, build the road, and save $1,000,000 annual
own transportation.

The charter of 1862 was believed by Congress to contain sufficient inducemer
land grant and subsidy loan to enlist the capital requisite to begin the enterpr
one had any idea that the full capital would be subscribed or paid in. That was
impossible. There were not many who believed the scheme was practicabl
people looked upon the whole thing as visionary. Under the charter of 1862
was done beyond effecting an organization. Capital held aloof from so unpror
venture.

In 1864 the charter was amended, the land grant was doubled, and other
made enlarging the inducements to capitalists to put enough money into the er
to give it a start. Even then, the practical railroad builders, who were extendin
beyond the Mississippi the lines of what are now the great systems of that secti
thorough examination of the subject, shrank from the undertaking. The Roc
and the North-Western were half way across Iowa, but still a long distance fr
objective point — the Missouri River. To one or the other of these roads it w
naturally to take hold of the Union Pacific charter, and under it extend its c
beyond the river. The franchise was more valuable to them than to anyone els
looked the matter over, considered the whole subject, and shook their heads. T
no money in it.

With experienced railroad builders, so advantageously situated, taking this view of e enterprise, the difficulty of procuring subscriptions and raising money to start the ork may be easily imagined. Enough subscriptions were made, however, to justify a ginning, though it was quite evident that very few of the subscribers had any expec- tion of a return on the investment, either as interest or principal. The first installments . these subscriptions furnished about money enough to pay the costs of a celebration on e occasion of breaking ground at Omaha in the autumn of 1864. This was quite an air for Omaha and Council Bluffs, both of them at that time sprawling settlements, iefly made of canvas, with hardly a two-story house in the whole outfit; but it did not ake much impression on the outside world. Ground having been broken with proper remony, everything stopped. Durant and Bushnell, who were the leading spirits in taining the charter and effecting an organization, were hard at work raising money and inly trying to get *bona fide* subscriptions enough to warrant going ahead. The limita- ons of the charter were a fatal obstruction. It was only when these difficulties were rmounted by the device of a construction company that they began to see light.

This is not the place to treat of the operations of the Credit Mobilier. I have only to y, as its executive officer during the period of its activity, that in my judgment its ethods were as legitimate and honorable as those of any corporation with which I have er been connected; and without it the Pacific Railroad could not have been built. It as through this organization, having been in the business of a railroad contractor all

my life, that I became interested in the Union Pacific; and I may say as evidenc faith in the property that a large part of my original stock in the company is hel to-day.

The advances made by the Credit Mobilier enabled the railroad company to go but on account of differences arising from a change in the original location of from Omaha west, work was delayed, so that it was about the beginning of 186 construction may be said to have fairly begun. Some grading was done in the a of 1864, but the first rail was not laid till July, 1865. During 1865 we laid forty n track, on the acceptance of which by the Government we received $640,000 in ment bonds — being $16,000 a mile — as a subsidy loan. The land grant was in a to this, but was not available to meet current expenses. Our land-grant bonds a mortgages were practically unsalable, and could only be used as collateral for loan through the means of the construction company.

This money was a great help to us, though it came far short of relieving the pe embarrassments which constantly beset us. Everything was done at enormo None of the Iowa roads had reached the river, consequently all our materials, mac fuel, provisions, men, everything in fact, had to go to St. Louis and be transferred by boat to Omaha. The treeless plains furnished no ties, and we were obliged to tr them from remote points at very great expense. Ties for a long distance sometimes $2.50 apiece. The cost of labor and provisions was also greatly enhan

ıe lack of direct communication with markets; and in the absence of wood or coal we ere obliged to procure fuel from long distances at a frightful cost.

Affairs wore a very unpromising look at the close of 1865, and were not much better the end of 1866, though we had laid 260 miles of track during the year. During 1867 e climbed to the summit of the Rocky Mountains, and added 240 miles of track, making)out 540 miles of completed road beyond the Missouri River. At the end of that year e were over the top of the mountains and nearly half way to Salt Lake City. The cost building over the mountains was so much less than we had expected that the con- ruction company found itself with a surplus from the proceeds of the subsidy bonds. his was imprudently distributed in dividends, so that in a short time we were in greater stress than ever for money. To add to our embarrassments the fact that we had :ached the dividend point brought the harpers down on us from outside, and led to ssensions among ourselves. Nothing but the faith and pluck of the Ameses, fortified ith their extensive credit, and the active financial aid of men like John I. Blair and her capitalists, carried the thing through. Meantime the scene of active operation from .e river to the mountains was attracting public interest and exciting public curiosity ore and more every day. People who thought for a long time that the whole scheme as wild and visionary began after awhile to realize that out there on the "Great merican Desert" an extremely interesting enterprise was afoot, and that whatever .me of it, one thing was certain, the world had never seen railroad building on so grand

a scale under such overpowering disadvantages and at such a rapid rate of prog opened fresh fields to the newspaper correspondents and a theme of uncommon for the press. After the first year the newspapers of the country began to be fil accounts of the progress of the work, with descriptions of the methods pur construction, and the physical aspect of the country traversed. Public inter gradually been wrought up in this way to such an extent that during the last construction it was the prominent topic; and the progress made in track lay telegraphed all over the country each day. It culminated on May 10, 1869, whe the large cities in the Union business stood still while the telegraph clicked the t the hammer that drove the last spike.

The chief engineer of the work, a man whose animating spirit had much to the wonderful rapidity with which it was pushed, was Gen. G. M. Dodge, w explored the whole country from the Missouri River to Salt Lake as far back when he was employed on the Rock Island Road making surveys. He was an en who communicated enthusiasm to his working forces, and he showed skill in the r ment of hostile Indians, contractors, laborers, and the ruffians and gamblers who f the camp. The close of the war, in which he distinguished himself, left him at to accept this position of chief engineer, and his intimate relations with Grant and S put him on such terms with commanding officers of garrisons and military pos the route, that he was enabled to avail himself of military aid against marauding

nd also frequently in maintaining order when worthless camp-followers became unruly. Vith him were Gen. Jack Casement and his brother Dan, in charge of the track-laying, ıen of boundless energy and undoubted courage, upon whom he could rely to carry out ny order with military promptness and unquestioning obedience. The working force ras almost entirely composed of discharged soldiers, whose experience during the war dmirably fitted them to encounter the dangers from hostile Indians and endure the ›rivations and hardships of camp life on the plains. At an alarm of Indians these men ell into line and prepared to meet the attack with the readiness and decision of veteran oldiers.

During 1868, and to May 10, 1869, we laid 555 miles of track, which took us to ›romontory Point, just north of the shores of Salt Lake, where we met the track of the ›entral Pacific and made the connection between the two roads. For various reasons he two companies had not always worked together in perfect harmony; and one result ›f mutual misunderstanding was, that instead of making the connection when the vorking parties came together, the graders on both sides kept right on until the two oadbeds lapped over two hundred miles. When the track-layers met, the law required . junction to be made, and this was done at Promontory. A controversy on the subject ras subsequently settled by the Central Pacific leasing of the Union the track from ›romontory to Ogden, which became the junction point.

Popular interest in the enterprise had become so universal and absorbing, and the

event of completion was awaited with so much anxiety, that a celebration of the oc with some formal ceremonies was not only proper but necessary to meet the expectation. But the scene was so remote, and we who were on the ground ha so much occupied with pushing construction and overcoming the pecuniary emb ments and other complications with which we were beset, that there was no oppo to make arrangements on any adequate scale for the celebration of what we all be one of the most important achievements of the nineteenth century. There time to make an elaborate programme nor any facilities for carrying it out when But our feeling was that, however simple the ceremony might be, the people of the country, who had kept in such close touch with us and had given us such sympath encouragement from the beginning, should be with us in spirit at the culmi moment, and participate in the joy of the occasion.

Arrangements for this purpose were made at very short notice, and, throu hearty coöperation of the telegraph companies, all the principal offices in the c were informed a few hours beforehand that, as soon as the preliminaries were com a signal would be given and every office being put in connection with Promontor blow of the hammer driving the last spike would be communicated by the click instrument at the same moment to every station reached by the wires.

General Dodge and the two Casements, and the force under them, were not idle the night of May 9th and the early hours of the 10th. The rivalry between the tw

anies had been very sharp, and neither neglected an opportunity to gain an advantage. he tracks were only a few feet apart on the night of the 9th. During the evening, eneral Dodge learned that the Central people had made their arrangements to put in dings early next morning and secure possession of the terminus. But when in the ray of the morning the Central's construction train moved up they found, to their surrise, the sidings all laid and the rails occupied by the Union Pacific locomotives and ars. The Central people took it, on the whole, very good naturedly, and did not permit to disturb the general good feeling of the occasion.

It was not a large crowd. In brass bands, fireworks, procession, and oratory, the emonstration, when ground was broken at Omaha, less than five years before, was much ore imposing. A small excursion party, headed by Governor Stanford, had come from an Francisco; while on our side, besides our own men, there were only two or three ersons present, among whom was the Rev. Doctor Todd of Pittsfield. Not more than ve or six hundred, all told, comprised the whole gathering, nearly all of whom were ficials of the two companies — contractors, surveyors, and employes.

The point of junction was in a level, circular valley, about three miles in diameter, rrounded by mountains. During all the morning hours the hurry and bustle of prepration went on. Two lengths of rails lay on the ground near the opening in the roaded. At a little before eleven the Chinese laborers began leveling up the roadbed, reparatory to placing the last ties in position. About a quarter past eleven the train

from San Francisco, bringing Governor Stanford and party, arrived and was greet cheers. In the enthusiasm of the occasion there were cheers for everybody, fr President of the United States to the day laborers on the road.

The two engines moved nearer each other, and the crowd gathered round th space. Then all fell back a little, so that the view should be unobstructed. Brief r were made by Governor Stanford on one side, and General Dodge on the other. now about 12 o'clock, noon, local time, or about 2 P. M. in New York. The two s tendents of construction — S. B. Reed of the Union Pacific, and S. W. Strawbri the Central — placed under the rails the last tie. It was of California laurel, polished, with a silver plate in the center bearing the following inscription: "T tie laid on the completion of the Pacific Railroad, May 10, 1869," with the names officers and directors of both companies.

Everything being then in readiness the word was given, and "Hats off" went c over the wires to the waiting crowds at New York, Philadelphia, San Francisco, a the principal cities. Prayer was offered by the venerable Rev. Doctor Todd, at t clusion of which our operator tapped out: "We have got done praying. The s about to be presented," to which the response came back: "We understand. ready in the East." The gentlemen who had been commissioned to present t spikes, two of gold and two of silver, from Montana, Idaho, California, and N stepped forward, and, with brief, appropriate remarks, discharged the duty assigned

MEETING OF THE EAST AND WEST. LAYING OF THE LAST RAIL, PROMONTORY, UTAH, MAY, 1869.

Governor Stanford, standing on the north, and Doctor Durant on the south side track, received the spikes and put them in place. Our operator tapped out: "All now, the spike will soon be driven. The signal will be three dots for the commenc of the blows." An instant later the silver hammers came down, and at each str all the offices from San Francisco to New York, and throughout the land the ham the magnet struck the bell.

The signal "done" was received at Washington at 2.47 P. M., which was al quarter of one at Promontory. There was not much formality in the demonstratio followed, but the enthusiasm was genuine and unmistakable. The two engines r up until they touched each other, and a bottle of champagne was poured on the la after the manner of christening a ship at the launching.

The event was celebrated in all the large cities, and everywhere hailed with d strations of delight. In New York, Trinity Church was thrown open at midd address was delivered by Rev. Doctor Vinton, and a large crowd united "to tender t to God for the completion of the greatest work ever undertaken by man." In delphia bells were rung and cannon fired. At Chicago a great impromptu demonst took place, in which all citizens joined; at Buffalo a large crowd gathered to he telegraph signals, sang the "Star Spangled Banner," and listened to speeches distinguished citizens; and at every important point the announcement of the comp of the work was received with unbounded joy.

That night our party started on their return, and the next day, May 11, 1869, trains gan running regularly over the whole line. New York was in direct rail communi- tion with San Francisco, and a new empire was thrown open in the heart of the ntinent.

The West and the Railroads

BY SIDNEY DILLON,
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The growth of the United States west of the Alleghanies during the past fifty y due not so much to free institutions, or climate, or to the fertility of the soil, as to ra If the institutions and climate and soil had not been favorable to the developm commonwealths, railways would not have been constructed; but if railways had n invented, the freedom and natural advantages of the Western States woul beckoned to human immigration and industry in vain. Civilization would hav slowly on, in a toilsome march over the immense spaces that lie between the Appal ranges and the Pacific Ocean, and what we now style the Great West would be, in the Valley of the Mississippi, an unknown and unproductive wilderness.

Like many other great truths, this is so well known to the older portions commonwealth that they have forgotten it; and the younger portions do not comp

appreciate it. Men are so constituted that they use existing advantages as if they d always existed, and were matters of course. The world went without friction itches during uncounted thousands of years, but people light fires to-day without a ought as to the marvelous chemistry of the little instrument that is of such inestimable lue, and yet remained so long unknown. The youngster of to-day steps into a xurious coach at New York, Philadelphia, or Chicago, eats, sleeps, surveys romantic enery from the window during a few days, and alights in Portland or San Francisco ithout any just appreciation of the fact that a few decades since it would have quired weeks of toilsome travel to go over the same ground, during which he would ave run the risks of starvation, of being lost in the wilderness, plundered by robbers, or lled by savages. But increased facilities of travel are among the smaller benefits nferred by the railway. The most beneficent function of the railway is that of a rrier of freight. What would it cost for a man to carry a ton of wheat one mile? hat would it cost for a horse to do the same? The railway does it at a cost of less an a cent. This brings Dakota and Minnesota into direct relation with hungry and ulent Liverpool, and makes subsistence easier and cheaper throughout the civilized orld. The world should, therefore, thank the railway for the opportunity to buy heat, but none the less should the West thank the railway for the opportunity to ll wheat.

No fact among all the great politico-economical facts that have illustrated the world's

PASSENGER STATION AT CHEYENNE; WYO.— On the Union Pacific System.

story since history began to be written, is so full of human interest or deals with such asses of mankind as the growth of the interior United States since the railway opened the seaboard these immense solitudes. The irruption of the northern tribes upon the oman Empire bears no proportion to it, and was destructive in its results; and we may y the same as to the Napoleonic wars. These are among the most celebrated events commonwealths on our planet, beginning and ending in bloodshed and enormous aste of capital. But within fifty years over 30,000,000 of people have been trans- anted to or produced upon vast regions of hitherto uninhabited and comparatively nknown territory, where they are now living in comfort and affluence, and enjoying a egree of civilization second to none in the world, and greatly superior to any that is nown in Europe outside of the capitals. And this could not have happened had it not een for the railway.

Through the same agency we have also reclaimed from nature immense tracts of nd, that were worthless except as to their possibilities, which once seemed too vague id remote to be considered, and are to-day valuable. To mention one instance: There in now be seen in New York City samples of potatoes weighing over six pounds each, heads of wheat representing a yield of sixty bushels to the acre, and of ears of Indian orn as large and full as any ever grown on the best lands of Virginia, that were roduced on land near Boise City, Idaho, where formerly nothing grew except sage-brush, id which was a part of an alkali desert. Railways have virtually changed the character

of the soil, not in any miraculous manner, but by encouraging legitimate met civilization and irrigation ; and they have also changed the climate. The farme trees, and these trees check the bitter north winds, and also cause an increased r he turns up the ground which formerly offered to the sky nothing but one u smooth, and iron-hard surface; and these vast extents of plowed land not only c rainfall by their evaporation, but invite rains by their contrasts of temperature. W this is a correct explanation of a fact is little to the purpose, the fact remains. Si railway opened the great central and western plateaus to cultivation, the clima become milder, the cold less destructive, and the rainfall greater. Large areas tha considered uninhabitable are now inhabited by a rapidly increasing populatio opulent cities, where capital becomes concentrated and productive, are met with as numerously as in the East.

But although these benefits arising from railway construction are so obvious, asserts that railways have been laid from philanthropic motives; and therefore among the promoters, contractors, and capitalists who have done the work we fin who have acquired large fortunes, western railroad construction and managem general have been bitterly and frequently attacked by the press, and have been ar are the subject of much hostile legislation. Grave charges are made; as, for in that the roads have in numerous instances been fraudulently over-capitalize excessively loaded with bonded debt; that they monopolize traffic; that they

ust rates of freight in order to pay dividends on fictitious values of stock; that they or one class of shippers at the expense of another class; that they permit the accumuon of unreasonably large fortunes, and to use a favorite phrase of demagogic orators, stantly "tend to make the rich richer and the poor poorer."

Legislation has been called in to give force to the theories involved in these declaions, particularly in the States west of the Mississippi, which happen to be the mmunities that owe their birth, existence, and prosperity to these very railways. tutory enactments interfere with the business of the railway, even to the minutest ails and always to its detriment. This sort of legislation proceeds on the theory that railroad is a public enemy; that it has its origin in the selfish desire of a company of n to make money out of the public; that it will destroy the public unless it is kept hin bounds, and that it is impossible to enact too many laws tending to restrain the aster. The advocates of these statutes may not state their theory in these exact ·ds; but these words certainly embody their theory, if they have any theory at all ond such prejudices as are born of the marriage between ignorance and demagogism.

Many of the grievances that are urged against railways are too puerile to be seriously iced, but the reader will pardon a few words as to "over-capitalization." Capital is in lf an unknown quantity, and its value depends wholly upon its productive uses, which distinguished from its productive powers in this — that the powers may or may not exercised, while the uses yield certain profitable results. The gold that is now locked

up by Nature in the western mountains is not yet capital, because, although we k is there, we do not know how much it will cost to reduce it to possession. The go that lies in the vaults of our banks is capital, but a large part of it is held as reserv except as it tends to sustain public confidence, it has no direct productive uses wha and, except as to confidence-sustaining quality, has no more earning value than a gravel.

Now, a railway is simply a manifestation of capital put to work; of human inc in its highest development applied to earning wages; it is a thousand men cond into one, and this one doing the work of a thousand; since if a thousand men stan straight line, five feet apart, they will transfer a ton of wheat in sacks from one e the line to the other in just the time that a freight car will carry the same ton one Now it is impossible to estimate in advance the productive power of this usefu untiring servant. Sometimes a railway is capitalized too largely, and then it smaller dividends; sometimes not largely enough, and then the dividends are mu excess of the usual interests of money. In the former case stockholders are willi reduce the face of their shares, or wait until increase of population increases rev in the latter they accept an enlarged issue. But, as a matter of reason and principl question of capitalization concerns the stockholders, and the stockholders only. A zen, simply as a citizen, commits an impertinence when he questions the right o corporation to capitalize its properties at any sum whatever.

Unquestionably, the citizen, if his farm is in the direction of a projected railway, is le to be compelled to make a sale to the company of a strip of his land; but a com-ent jury assesses the value, and such valuators rarely favor the company. The zen's farm is then worth more than it was, and he can send his produce to market at a aper rate. But all this does not make it his business to question the right of the com-y to bond its road at any given sum per mile, or to issue stock thereafter to any given ount. Such transactions are wholly matters of private contract; and under the nmon law, and the laws of Nature that govern all possible events, they regulate mselves.

All civilized communities in which self-government is recognized are perpetually trying egulate matters of private contract by statute, and are perpetually failing to do so. It proverb in Great Britain and the United States that the chief wisdom of legislatures hown in repealing the statutes enacted by previous legislatures. England is great to-, not by virtue of what Parliament has enacted, but by virtue of the intelligence and ustry of her people working under natural conditions restored to usefulness by virtue the repeal of acts of Parliament. Our citizen whose fields have been crossed by the road, and whose right of way over the turnpike is occasionally interrupted by the motive, may fancy that it is for the interest of himself and his neighbors to induce legislature to regulate the prices of fares and freights on the railway, but he ignores great laws that overrule all such enactments.

Such enactments are useless as to the rights and liabilities of railway corporati
because the common law has long since established these as pertaining to common carri
and the courts are open to redress all real grievances of the citizen. Then as to pri
these will always be taken care of by the great law of competition, which obtains where
any human service is to be performed for a pecuniary consideration. That any railw
anywhere in a republic, should be a monopoly, is not a supposable case. If between t
points, A and B, a railway is constructed, and its charges for fares and freight are burd
some to the public and unduly profitable to itself, it will not be a long time before anotl
railway will be laid between these points, and then competition may be safely trusted
reduce prices. We may state it as an axiom that no common carrier can ever maint
burdensome and oppressive rates of service permanently or for a long period. Rates m
seem burdensome, but may not be oppressive. A road may be enormously expensive
build ; its grades may demand excessive expenditure of fuel and be wearing to the rolli
stock ; such a road obviously can not carry freight and passengers as cheaply as so
other road that is laid over a plain. But if these difficulties exist between A and B, th
citizens must be content to compensate the people who open the communications which
needed, and who were bold enough to risk a great capital in doing so ; they should
seek to cripple their operations by procuring hostile legislative enactments.

Calculations based upon the law of competition have this advantage over those bas
upon the enactment of statutes: That the foundations on which they rest are immutab

PASSENGER STATION AT OGDEN, UTAH.— On the Union Pacific System.

and not only so in their own right, but they can not be changed by any process wha
Statutes can be overridden and evaded while they exist on the books, and be repealed l
same authority that created them; courts can construe them so rigorously that their vi
shall be squeezed out of them; but no power can prevent one man or set of men from
ing to perform a lawful service at lower rates than another. The operation of this gre
is visible everywhere, and needs no interpreter. People who have money to lend co
with each other in lending on the best class of securities at much less than lawful in
in all the great money markets. On such securities borrowers do not need the prot
of usury statutes; and on the great mass of insecurities that swarm in the same ma
the competition of borrowers induces the offering of much more than legal interes
the usury statutes are of no benefit. The laws of human action, based on the n
constitution and reason of men, forever bid defiance to statutes.

As one result of competition, we may instance the freight charged upon wheat
Chicago to New York by all-rail in 1868 and in 1890. In 1868 it was 42.6 cents per bu
in 1890, 14.31 cents. This illustrates the beneficent effect of competition between
lines both to producers and consumers; but the benefit does not stop here. This c
tition brought down the charges by all-water (lake and canal) from 22.79 cents in 1
5.85 cents in 1890. It will not answer to argue that the water rates have reduced th
rates. Shippers prefer rail transportation; grain arrives in better condition, in sh
time, with smaller insurance rates; bills of lading are much more negotiable, and in

s are lessened. The greater controls the less; the superior makes the standard for erior; and when in twenty-two years the railway reduces its freight charges 66 per he propeller and canalboat are compelled to reduce their charges 75 per cent. For duction the shippers by water may thank the railroads, even if they do not use them. ilar reductions have taken place in rates from remote western points to Chicago . Louis, although in this case there was no rivalry with water except as to the narrow production tending eastward by way of Lake Superior. The rivers emptying into issouri and Mississippi from the west may be, as a whole, classed as unnavigable; , the grain production of the Dakotas, Nebraska, and other Western States must be d by the railroads. And this necessity has been the parent of so many railroads that etition has brought rates down to a point where profit to the carrier has almost peared. Where rival companies are underbidding each other for business, no acts of islature are necessary to prevent them from putting up rates. Reason and facts both ly lead to this conclusion.

here is a great deal of declamation on the part of the press as to railway combination monopoly and their injurious results to the people; but we venture to state that "com-tions" do not combine, and "monopolies," whose constant tendency during a long s of years has been to bring producers and consumers into closer relations with each and lessen the cost of living to both, deserve praise and support rather than censure adverse legislation. And if there does, indeed, exist between the railroad owners and

the public a strife between capital and labor, as we are informed by so many people profess to be able to cure the disease of poverty if we will only give them all the prop of the nation to start with, it certainly looks as if capital was getting the worst of the ba

It is not a long time since the bondholders and shareholders of American railv were, as a rule, receiving as interest or dividends from 7 to 8 per cent per annum. ' T usufructs have almost universally dwindled to 5 and 4 per cent. Coincident with this there is a diminution of the market value of shares; all of which is to the disadvantag capital. Wages have not shrunk in anything like this ratio; and, since the necessari life are all cheaper than they were when bondholders were drawing 7 per cent inte we may safely say that the purchasing power of wages, in the generality of occupat that are compensated in wages, is as great as ever. And if a laborer wishes to capita he can buy as much railroad stock now with the earnings of a hundred days as he could. In fact, if it were pertinent to the subject, we think we could show that he c buy more. But we only care to establish the proposition that railways are not opp sive engines of capital, and are not the enemies of labor; but that they are, in sober tr the best friends to-day of the American people, and that they are in a large degree means and the evidence of the unexampled prosperity of the United States.

Some of your readers may think that we have given too much space to the discus of legislative enactments touching railways, and especially the railways of the Wes States; but we feel that the importance of the subject might well employ longer time

argument than we are able to furnish. One of the greatest dangers to the unity in a republic is this: That it is in the power of reckless, or misguided, or ning men to procure the passage of statutes that are ostensibly for the public interest, hat may lead to enormous injuries. Let us imagine, for a moment, that all the ays in the United States were at once annihilated. Such a catastrophe is not, in , inconceivable; the imagination *can* grasp it; but no imagination can picture the te sufferings that would at once result to every man, woman, and child in the entire try. Now, every step taken to impede or cripple the business and progress of our ays is a step toward just such a catastrophe, and therefore of a destructive tendency. e do not arrogate superior wisdom or intelligence to ourselves when we suggest to people of the United States, and especially of that portion of the country where ays have been the subject of what we consider to be excessive legislation, that the nal mode of treating any form of human industry that has for its object the perform- of desired and lawful services is to let it alone, and that the railway is no exception is principle. The best government is that which governs least, not because the best rnment is that which overlooks trespassers, but because in a community where there no trespassers, a government of correction or restraint would not be needed.

iven a company of men pursuing a lawful and useful occupation—why interfere with ı? Why empower a body of other men, fortuitously assembled, not possessing rior knowledge, and accessible often to unworthy influences, to dictate to these

MORMON TEMPLE AND TABERNACLE, SALT LAKE CITY, UTAH.—On the Union Pacific System.

s how they shall manage their private affairs? Wherever such management
ts with public policy or private rights, there are district attorneys and competent
·s and upright courts to take care that the commonwealth or the citizen shall receive
.riment. Even as to such matters of public interest as the crossing of highways
e management of trains through large cities, if we were obliged to choose between
ive and meddlesome legislation and no legislation at all, the latter would be
able. If a company neglects to slow up its trains at a turnpike crossing or to sound
alarms, let juries inflict the penalty in commensurate and exemplary damages.
:r care would then be exercised than under existing statutes; and because a statute
ıys a double-edged sword, it is as easy to plead compliance as evasion; and if the
: sets six miles an hour as the limit at the crossing, the sworn testimony of the
engineer that he was within the statute is more valid than that of the inexpert
der or passenger which avers the contrary. But where under the common law the
ny is *prima facie* guilty of trespass, it must make out a very clear case of contribu-
egligence to escape the penalty.

: must not forget that the great majority of the railways in the United States are
eation of private enterprise and capital, and that the people in their collective
ty have not been taxed in order to construct them. The exceptions are certain
ations whose work has done more to open the vast territory between the Pacific and
ississippi to civilization and the uses of the nation than any other agency. Land

has been given to these railways, and in a few instances the credit of the Governme been lent. The land was at the time almost worthless, and but for these railways have remained so during a long period; the credit, although not yet, will undoubte repaid, and meantime the Government has a lien upon the property.

In regard to one of these companies—perhaps the one that has been the subj more misrepresentation and abuse than any other—we may be pardoned for quoting words by the Hon. Jesse Spalding, himself a Government official, written in 1889, i report to the United States Secretary of the Interior:

"I found people in Nebraska who are possessed with the idea that the Union P was constructed for, and should be operated mainly in deference to, the wishes o section, and who actually believed that their State should be consulted by the man before any improvements were made, innovations prosecuted, or extensions p forward. In the minds of such people the question whether the road had done mo the State than the State had done for the road never seemed to arise. But those wh an unreasoning and, to my mind, a most unjust view of the conduct of the Union P are exceptions to the rule. Among the most advanced thinkers of Nebraska a dif feeling exists and different opinions prevail. They point out with just and pardo pride the wonderful strides which the young State has made since the Union P Railway was constructed. They call your attention to the beautiful, bustling wealthy city of Omaha, with its 140,000 inhabitants; to the handsome and progr

apital, Lincoln, with its 60,000; to Grand Island, with its 15,000; to Beatrice, with
00; to Fremont, with its 10,000; and Hastings, with its 13,000, and to a hundred
g towns and cities along the lines of the main stem and its branches, the growth
)f which is directly due to the facilities for the receipt, distribution, and shipment
modities and manufactures afforded by the Union Pacific System."

l again, as a closing voucher for our assertion that the West is under enormous
ions to railways, from the same report:

ıe growth of the whole country from the Missouri River to the Rockies is
ing. One sees nothing but signs of life and evidences of progress on all sides.
ıallest hamlets are imbued with the same spirit that characterizes the larger towns
ies. The people are everywhere enterprising, energetic, and industrious. Improve-
innovations, and inventions that the East has not yet had time to adopt, to make,
tilize are to be found in full operation in these new communities. Small towns in
r West have a better system of street railways and street illumination than the
:ities of the East. Street cars drawn by horses, in the minds of Western people,
to the remote past. It is a slow town, indeed, that has not got its cable or electric
/, or that depends upon gas as a street illuminator. While there has been an
thy inflation in the price of real estate in many of those towns, my observation was
ost of them had passed safely through the dangerous speculative period of their
ıce, and are now growing steadily and solidly. But few of the towns which have

attracted attention by reason of their sudden, rapid, or mushroom growth, during tl twenty years, have disappointed those who cast their lots with them. They are all well situated, and, in my opinion, are destined to continue growing in populati wealth for many years to come. Manufactories of all kinds are everywhere welcom encouraged, morally and substantially; mining in some sections is only yet in its in industries of all kinds find a constantly growing market; the agricultural distri expanding month by month; there is nothing, apparently, to check the tide of prosp

SIDNEY DILLC

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e Last Spike of the Union Pacific Railway.

The Railway Age and Northwestern Railroader of July 29, 1892, we reproduced from *r's Magazine* for August last an illustration of the driving of the last spike of the Pacific Railway on May 10, 1869. In the article in the magazine it was stated ie photographs from which the illustration was made was believed to be the only existence. That this was an error has been called to our attention by Mr. Lewis son, of Chicago, who was, in 1869, yardmaster in the employ of the Union Pacific ay. Mr. Anderson has loaned to us, not only a duplicate of the photograph from the illustration already produced was made, but also two other views of the sting ceremony, either of which is, perhaps, better than the one which has already shown. We give reproductions herewith. In the groups many well-known faces e found (among others Mr. Anderson is there himself), and, as the reproductions the photographs are excellently preserved after twenty-three years.—*Railway Age, o, October, 1892.*

Information Regarding

The various points of interest on The Original Overland Route can be sc
addressing any of the following passenger agencies of the Union Pacific .

ALBANY, N. Y.—23 Maiden Lane.
BOSTON, MASS.—292 Washington Street.
BUFFALO, N. Y.—210 Ellicott Square.
BUTTE, MONT.—50 North Main Street.
CHEYENNE, WYO.—Union Pacific Depot.
CHICAGO, ILL.—191 South Clark Street.
CINCINNATI, OHIO—Room 35 Carew Bldg.
COUNCIL BLUFFS, IOWA—U. P. Transfer.
DENVER, COLO.—941 Seventeenth Street.
DES MOINES, IOWA—401 Walnut Street.
DETROIT, MICH.—67 Woodward Avenue.
HELENA, MONT.—56 North Main Street.
INDIANAPOLIS, IND.—9 Jackson Place.
KANSAS CITY, MO.—1000 Main Street.
LEAVENWORTH, KAN.—228 Delaware St.
LONDON, ENG.—122 Pall Mall.
LOS ANGELES, CAL.—223 South Spri
NEW YORK CITY—287 Broadway.
OAKLAND, CAL.—1010 Broadway.
OGDEN, UTAH—Union Depot.
OMAHA, NEB.—Ninth and Farnam S
PHILADELPHIA, PA.—Room 3, 20 S.
PITTSBURG, PA.—1016 Carnegie Bu
PORTLAND, ORE.—135 Third Street
ST. JOSEPH, MO.—Chamber of Com
ST. LOUIS, MO.—213 North Fourth S
SALT LAKE CITY, UTAH—201 Ma
SAN FRANCISCO, CAL.—1 Montgome
SEATTLE, WASH.—618 First Avenu
SIOUX CITY, IOWA—506 Fourth Str
TACOMA, WASH.—907 Pacific Avenu
YOKOHAMA, JAPAN—4 Water Stre

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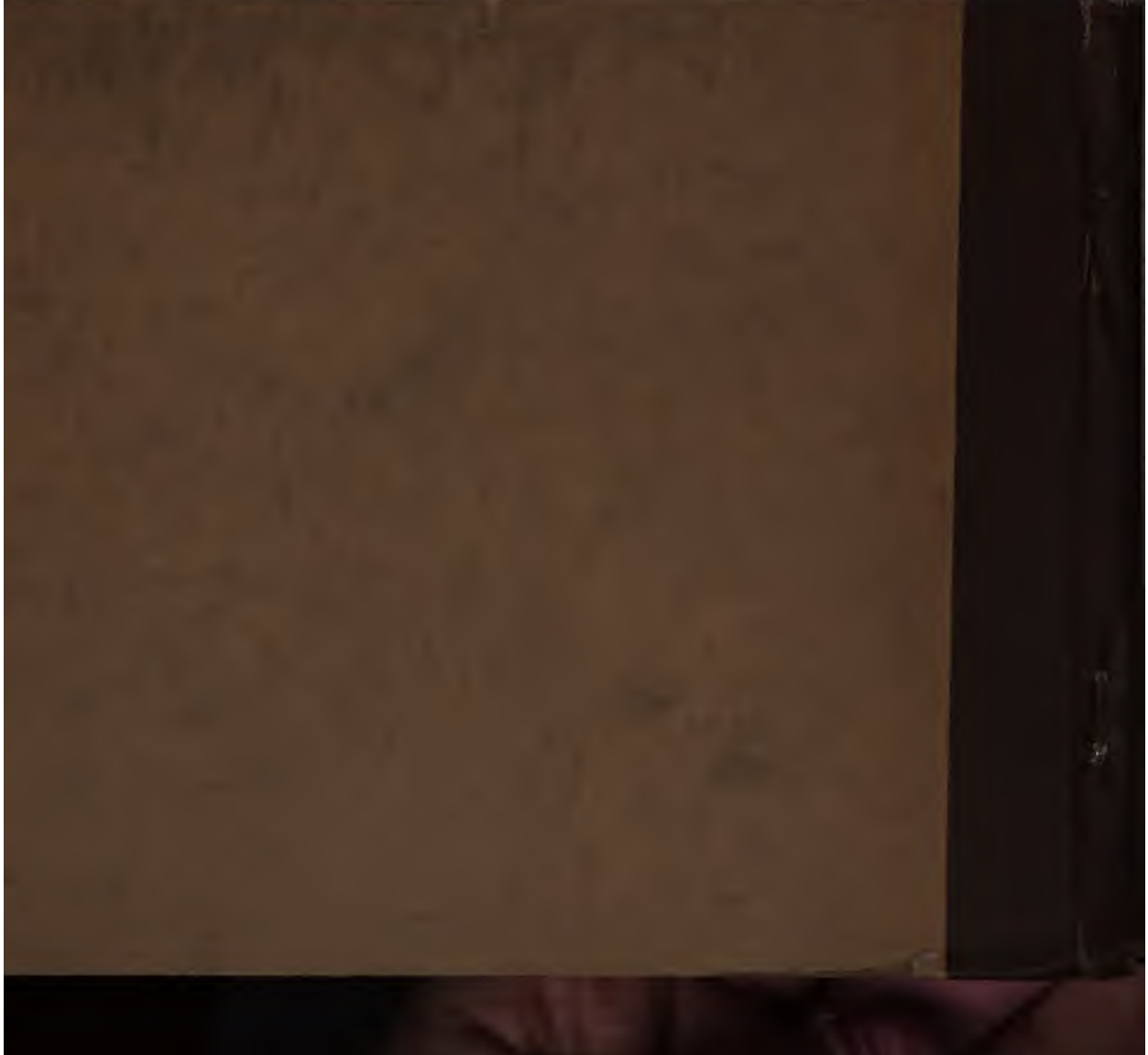
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